Note on a Variety (?) *of* Alcyonella fungosa.

To the Editors of the Annals and Magazine of Natural History.

Gentlemen,—I have much pleasure in introducing to your notice a variety, as I believe it to be, of the above species; it grows in large pyriform or fusiform masses, on twigs of bushes dipping just below the surface of the water, in a pond about a mile from Exeter, near the South-western Railway.

The polyzoon has from forty-eight to fifty tentacles, which are much longer than those figured by Professor Allman. The cœnœcium is repeatedly branched from the base upwards: the upper branches only are free; the lower portion is of a very tough, dark-brown, nearly black, coriaceous substance, the upper or free portion thin and transparent; and, instead of being smooth, these are wrinkled into a number of transverse folds, the edges of which are frequently coloured brown. Some of the apices of the ectocyst are nearly smooth, or with only the rudiments of folds; and others, again, are rugged, and the orifices widened and rolled back, so as to give them a sort of trumpet-shaped mouth; but they all have the brown annulations as above mentioned.

The apices of the ectocyst are emarginate or notched similarly to those of *A. Benedeni*, but they have no appearance whatever of a ridge or furrow.

The statoblasts are of three kinds:—1. Those with a rather broad annulus, and the centre perforated with a rather large perforation, the sides or edges of which are pressed into slight plaits or folds; these vary in colour from pale yellowish brown to a full rich brown; they are dotted with raised points, the same as in the type figured by Professor Allman; the annulus is reticulated the same. 2. With a much broader outline, nearly orbicular, dark brown, and without any perforation. 3. Forming a very broad ellipse, and with a comparatively very broad annulus; this forms somewhat of an angle, or point, at the long axis of the ellipse, nearly approaching the form of the statoblast in *Lophopus crystallinus*; but they are thicker and more opaque than in that species.

The above appear to be the principal differences that I have been able to observe in this variety or species. There is one more, however, which may have some weight; and that is the form of the tubes: these are not round as in *A. Benedeni*, or pentangular as in *A. fungosa*, but are intermediate between the two; for when a section is made of a mass of tubes at right angles to their length, they will be seen to be irregular, the outside ones round, whilst those on the inside are from 3- to 4-, 5-, or 6-angular.

This variety appears to me to be intermediate between *A. fungosa* proper and *A. Benedeni*, as it seems to possess characters belonging to both. Thus the round tubes and the emarginate mouth would point to *Benedeni*; whilst the subangular tubes and the mode of growth and attachment, with the form of the staloblasts, point to *fungosa*, leaving the remarkable rugose and annulose appearance of the cœnœcium peculiar to this variety.

The pond in which this was found is a very small one, only 5 or 6 yards in diameter, and the only other species I have met with in it is *Lophopus crystallinus*; of the latter I have not met with any this year. This variety grows attached to twigs in the full blaze of the sun; and the little animals appear to enjoy it immensely. The specimen I obtained was about four inches long, by an inch thick in the middle; but I left another about the same length but apparently thicker.

I am, Gentlemen,
Yours obediently,
EDWARD PARFITT.

Devon and Exeter Institution,
Exeter, June 18, 1868.

On the Avicolar Sarcoptidæ, and on the Metamorphoses of the Acarina.
By C. ROBIN.

The Acarina pass through a series of metamorphoses—a hexapod larva issuing from the egg becoming converted into a nympha, from which the adult Mite proceeds. The author has observed in the Sarcoptidæ a more complicated series of phenomena; in these the males pass through four, and the females through five stages, indicated as follows:—

1. The *egg*, on issuing from which the animal has the form of
2. A *hexapod larva*, followed by the stage of
3. *Octopod nymphæ* without sexual organs.
4. From some of these nymphæ issue:—*a*, *sexual males*, after a moult which is final for them; *b*, from others issue *females without external sexual organs*, resembling the nymphæ, but larger, and in some species furnished with special copulatory organs.

Finally, after a last moult following copulation, these females produce

5. *The sexual and fecundated females*, which do not copulate, and in the ovary of which eggs are to be seen. No moult follows that which produces males or females furnished with sexual organs; but previously to this the moults are more numerous than the changes of condition.

Ovular and embryonal state.—The eggs of these Acarina are of a cylindroid form with rounded ends, one of which is smaller than the other, and corresponds with the rostrum. They are more or less flattened on one side; and to this surface the ventral surface of the young animal corresponds. The exclusion is effected by the division of the cephalic extremity into two halves. The ova are deposited by the avicolar Sarcoptidæ in the angle formed by the barbs with the stem of the feather. In general the segmentation of the vitellus has not commenced when the eggs are laid; but in some species the vitellus is divided into four lobes while the egg is still in the oviduct. The division takes place in planes perpendicular to the greater axis of the vitellus.

The Larva.—In all the species the larvæ are hexapod; and the arrangement of the epimera shows that it is the third, and not the